



# Environmental Research News

May 28, 1998

## New EPA Building Designed to Protect Indoor Environment

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In keeping with the mission to protect the environment, the U.S. Environmental Protection Agency in the Research Triangle Park is constructing its new 1.1 million square foot research and office complex to protect indoor environmental quality, increase energy efficiency and promote pollution prevention. Some of the green building features have been put into a model office space for EPA employees to see office configuration and steps being taken to make the workplace environmentally friendly.

The offices have been outfitted using paint, carpets and office furniture that emit low levels of formaldehyde and volatile organic chemicals, one of the main sources of indoor environmental contamination. Furniture has been selected based on low emissions of chemicals as well.

An EPA design team worked closely with designers to develop a 150-page Indoor Air Quality Facilities Operation Manual that documents the procedures which need to be followed during construction and maintenance to prevent or eliminate as many indoor contaminants as possible. Before any material was specified for use in the building, it was examined by the design team to evaluate its ability to protect the indoor environment. The manual outlines ways to eliminate as many indoor contaminants as possible and increase energy efficiency to offset any heating or cooling lost because of the need to increase air circulation to the laboratories.

The design team for the new facility has received technical assistance from EPA's environmental researchers in the laboratories to ensure that the new building will provide the best balance of cost effectiveness, energy efficiency and clean indoor air, said Chris Long, EPA project manager.

“Designing a new facility with a good indoor environment has been a top priority from the start, however, a multitude of choices must be made during design to achieve this goal. We were extremely fortunate to have EPA's leading environmental experts right here in our laboratories to assist us,” he said.

At EPA's research laboratories in the Research Triangle Park, indoor environmental chambers are used to learn about the sources which contribute to concentrations of pollutants in the indoor environment. The information on emissions can be used to identify possible options to prevent releases of contaminants.

Currently, researchers are developing methods and protocols as part of the Environmental Technology Verification Program that can be used by industry to test emissions from furniture, carpets and other products. Working in cooperation with industry, EPA is providing the science necessary for industry to establish voluntary emission standards for its products in an effort to respond to indoor air quality concerns.

“Basically, what we're finding in our research is that if you manage a building properly, you should be able to minimize exposure to indoor pollutants,” said Leslie Sparks, Ph.D., a senior chemical engineer at EPA and indoor environmental researcher.

The EPA's new research and office complex will serve as a model for building environmentally friendly workplaces. The design, construction process and selected building materials have all been considered with the goal of protecting indoor air quality.

“This major construction project, in many respects, becomes a living laboratory for the EPA science. Our goal is to make this building a model for indoor air quality,” said William G. Laxton, EPA director of administration.

Among the many steps that are being taken to protect indoor air quality are:

1. Paints, finishes, sealants and other materials are being selected based on low emission ratings of volatile organic chemicals and other chemicals such as formaldehyde that are associated with indoor air contamination.
2. Installation of products are being prioritized to minimize and protect indoor air quality. For example, paints and finishes that emit indoor air contaminants for a short duration after they are manufactured or installed will be applied before carpets and other absorbing materials are installed. Chemical emissions can be absorbed by carpets, fabrics or ceiling materials and then re-released into the air.
3. Before occupancy of the new building, scheduled for 2001, the contractor is required to “air out” the facility and hire an independent consultant to test levels of indoor air contaminants to ensure that they are within EPA-specified requirements.

**NOTE TO EDITOR: Tours of the EPA's model office unit and environmental chambers will be available from 10-noon on May 28. For more information, contact Ann Brown, Public Affairs, 919-541-7818 or e-mail: [brown.ann@epamail.epa.gov](mailto:brown.ann@epamail.epa.gov).**